

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Thus, claim 1 has been amended to indicate that the carbon particles are partially embedded in a surface of the valve metal material, which is supported by the specification in general, and more specifically page 16, line 23. Furthermore, amended claim 1 incorporates the subject matter of claim 2, which has therefore been cancelled.

Attached hereto is a marked-up version of the changes made to claim 1 by the current amendment. The attached page is captioned "Version with markings to show changes made."

With regard to the Examiner's comments about the Information Disclosure Statement, please see the Second Request for PTO-1449 Form and copies of the references submitted concurrently herewith.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 1, 2 and 5 under 35 U.S.C. §102(b) as being anticipated by JP 50-44461 is respectfully traversed.

The Examiner takes the position that this reference teaches an electrode material comprising a valve metal and carbon particles from a dispersion fixed in a surface thereof, where the carbon particles are specifically disclosed to be deposited on the rough surface. The Examiner then states that "it is reasonably presumed that the particles will be exposed thereon." However, as will be apparent from the following remarks, this presumption is erroneous.

JP '461 discloses an electric collector used for supporting a polarized electrode of an electric double-layer capacitor. This collector includes a carbon layer placed on an aluminum sheet by soaking the sheet in a carbon-dispersed slurry and a rubber-like carbon electrode paste which is to later become a polarized electrode, applied on the carbon layer. The carbon layer and the carbon paste are rolled on the sheet to make a double layer electrode. Therefore, the carbon layer is merely placed on an aluminum sheet, and after rolling, the carbon layer can be fixed in the surface as a carbon electrode together with the carbon paste to comprise a double-layer electrode.

It is therefore apparent that the reference does not disclose or suggest the electrode metal material of the present invention in which carbon particles are partially embedded in a surface of the

valve metal material and projected from the surface of the valve metal material to expose the carbon particles from such surface.

The rejection of claims 1-3, 6, 7, 10, 122 and 123 under 35 U.S.C. §102(b) as being anticipated by Fraioli et al. is respectfully traversed.

As noted by the Examiner, Fraioli et al. describes an electrode cell in which a paper cathode sheet consisting of a water-laid web of asbestos fibers and conductive carbon particles on an aluminum expanded metal screen which serves as a current collector and scrim.

However, the reference does not disclose any structural feature of the carbon particles with respect to the surface of the aluminum screen, which is a part of the paper cathode electrode.

Although the Examiner states that the current collector valve metal is disclosed in a body of conductive porous carbon, leading the Examiner to conclude that the carbon particles are exposed on its surface, the reference does not suggest the structure of the electrode metal material of the present invention in which carbon particles are partially embedded in a surface of the valve metal material and projected from such surface to expose the carbon particles from the surface.

The rejection of claims 4, 8, 9 and 121 under 35 U.S.C. §103(a) as being unpatentable over Fraioli et al. in view of Hart et al., as well as the rejection of claim 5 under 35 U.S.C. §103(a) as being unpatentable over Fraioli et al. in view of Belloni, are respectfully traversed.

The comments set forth above concerning the Fraioli et al. reference are considered to be equally applicable to each of these rejections.

The Examiner applies the teachings of the Hart et al. and Belloni references for the purpose of rejecting dependent claims of the present application (claim 1 being the only independent claim under consideration). However, neither of the secondary references cures the failure of Fraioli et al. to disclose or suggest the features of the present invention as set forth in claim 1. Therefore, even if the secondary references are combined with Fraioli et al. in the manner suggested by the Examiner, the result of such combination would still not suggest the subject matter of the dependent claims.

For these reasons, Applicants take the position that the present invention is clearly patentable over the applied references.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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Version with Markings to
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1. (Twice Amended) An electrode metal material for use in an electrode structure in contact with non-aqueous electrolyte, wherein the electrode metal material is a carbon-containing metal material comprising a valve metal material, and carbon particles [fixed] partially embedded in a surface of the valve metal material and [exposed to the surface thereof] projected from the surface of said valve metal material to expose said carbon particles from said surface.